Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

DISCOVERIES AND IMPROVEMENTS, IN ARTS, MANUFACTURES, AND AGRICULTURE.

A patent has been granted to Mr. George Smart, Westminster, for an improved method of preparing Timber, so as to prevent its shrinking.

THE nature of his invention, and the manner in which it is performed, are thus described. In many cases in which the shrinkage occasioned in timber, by exposure to hot or dry air, or to any circumstance which abstracts moisture from the pores of wood, is productive of injurious consequences, and this is prevented from taking place, by a previous compression of the wood into a less compass, by a proper application of mechanical powers, than can ever be induced by the common causes which occasion shrinkage. This invention will be particularly useful to coopers, vat-makers, and builders. For example, in preparing staves for vats or casks, the staves are cut square on the edges, and passed between a pair of rollers, made with bevelled grooves in them, so as to press the wood on the edges into the bevel that is necessary to give the required rotundity, according to the width of the staves, that are to form the casks or vats. And the heading is passed through parallel rollers, loaded in proportion as the wood is hard, or thick: for canteens or smaller kind of work, the patentee presses the staves with a screw press, or lever, which not only bevels them, but, by its action on the inner edges, gives them a degree of curvature, which facilitates the subsequent cooperage. "Vessels," says Mr. Smart, "made of staves, previously submitted to such a process as I have described by any means fitted to produce the effect required, will be always tight, whether full or empty; the wood being pressed into a closer state than it ever could attain by shrinking; nor do they require the insertion of rushes between the joints, as is often done in the common ways of forming casks and other vessels destined to contain liquors. Again, in carpentering, the best performed trussing commonly gives way, owing to the subsequent shrinkage of the timber; this evil is prevented by my invention; all that is necessary being to press, by means of a screw press, what is commonly called the crown of the King-post, and also the base of the truss into a less volume than drying could ever occasion, before inserting the trusses. The boards to be employed for flooring should be passed edgeways between rollers, to close the fibres of the wood, before laying down the floor. From the above description, no competent workman will be at a loss to adapt his wood to the purpose to which it is to be applied."

Observations. In making casks upon the present plan, the great inconvenience to the public is their liability of falling to pieces in very dry weather, if left empty. This evil was felt to a very great extent in the article of Canteens, made for the use of the army, though got up with the utmost dexterity. Thousands required re-making, on account of shrinkage, long before they were worn out, sometimes before they could be used. On the principle of this invention, the evil is entirely prevented. Again, with all the care that could be given by the manufacturers, a considerable proportion was returned on their hands, as unfit for use, through leakage: but, we are told, that out of 32,000 wrought with compressed wood, not a single canteen has failed, though subjected to the nicest scrutiny, and most rigid experiment, performed with the agitation of hot water in every vessel.

Monthly Magazine.

A patent has been granted to Messrs. Peter Moore's, and Co., London, for a Vertical Bond in buildings, &c.

THE English, Flemish, and lock-bonds comprise the different modes by which brick-walls are at present erected; these are distinguished by the manner of connecting the bricks in each distinct course, but the courses themselves are separated by a regular smooth joint. The defect occasioned by this disunion of the courses, is attempted to be remedied by placing bond-timber longitudinally in the walls, but this alternative is attended with evil consequences in the case of fire, for when the bond-timber is destroyed by the violence of the heat, the walls become incapable of bearing their own weight, and fall down; then the flames, increased by an open communication with the free air, spread with a rapidity to the adjoining buildings.

To guard against this calamity, the legislature have provided, that no timber shall be placed in the party-walls within a specified distance of a chimney, and that the walls shall be of a thickness corresponding with the rate of the building. This provision is certainly the most effectual of any yet offered, but it is, and must continue, defective, so long as these walls are suffered to contain a large quantity of combustible matter as part of their substance.

The improvement now offered, consists in uniting the brick-work into one solid mass, by placing bricks vertically in the inside of the wall, either in a direct or varied course, from the foundation to the top of the building; as will more fully appear by the following specification.

In forming the first horizontal course of bricks, in the foundation of a wall of the breadth of fourteen inches or upwards, there is placed in the inside thereof an hard brick in a vertical or perpendicular position, with its edge toward the front of the wall, at the distance of four and an half inches from the left-hand end of the same; there are also placed vertical bricks at the distance of six feet from the centre of each other in succession throughout the whole length of the wall. In forming the second course, there is placed in succession a vertical brick at the distance of two feet from the centre thereof, to the centre of the vertical brick placed in the first course. In forming the third course, there is placed a like vertical brick at the like distance of two feet from the vertical brick built in the second course. And in forming the fourth course, there is placed a like vertical brick immediately above each vertical brick situate in the first course. And, against the side of each of these columns, as they ascend, there is placed other vertical bricks, the middle of one brick being opposite to the end of the other. This process is continued to the top of the wall. Or these vertical bricks may be placed with their edge towards the end of the wall. Or this improvement may be obtained by placing the vertical bricks in a transverse direction, changing to the right and left alternately, to the top of the wall; regard being had, that in building a